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## INFORMATION DISCLOSURE STATEMENT BY APPLICANT

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Sheet

2

of

5

**Complete if Known**

Application Number	10/694,284
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<b>Filing Date</b>	10/27/2003
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<b>First Named Inventor</b>	Xu et al.
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Group Art Unit	Unassigned
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Examiner Name	Unassigned
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Attorney Docket Number	PA94-36-03
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## FOREIGN PATENT DOCUMENTS

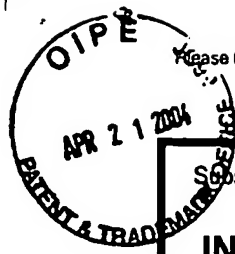
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<sup>1</sup>Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.



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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)		Filing Date	10/27/2003		
		First Named Inventor	Xu et al.		
		Group Art Unit	Unassigned		
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Sheet	3	of	5	Attorney Docket Number	PA94-36-03

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
	A22	Krauss et al., "Fabrication of Nanodevices Using Sub-25nm Imprint Lithography," Appl. Phys. Lett 67(21), 3114-3116, 1995	
	A23	CHOU et al., "Imprint of Sub-25 nm Vias and Trenches in Polymers," Applied Physics Letters, November 20, 1995, pp. 3114-3116, vol. 67(21).	
	A24	CHOU et al., "Imprint Lithography with 25-Nanometer Resolution," Science, Apr. 5, 1996, pp. 85-87, vol. 272.	
	A25	HAISMA et al., "Mold-Assisted Nanolithography: A Process for Reliable Pattern Replication," Journal of Vacuum Science and Technology, Nov/Dec 1996, pp. 4124-4128, vol. B 14(6).	
	A26	CHOU et al., "Imprint Lithography with Sub-10nm Feature Size and High Throughput," Microelectronic Engineering, 1997, pp. 237-240, vol. 35.	
	A27	XIA et al., "Soft Lithography," Annu. Rev. Mater. Sci., 1998, pp. 153-184, vol. 28.	
	A28	XIA et al., "Soft Lithography," Agnew. Chem. Int. Ed., 1998, pp. 550-575, vol. 37.	
	A29	WU et al., "Large Area High Density Quantized Magnetic Disks Fabricated Using Nanoimprint Lithography," Journal of Vacuum Science and Technology, Nov/Dec 1998, pp. 3825-3829, vol. B 16(6).	
	A30	COLBURN. et al., "Step and Flash Imprint Lithography: A New Approach to High-Resolution Patterning", Proc. of SPIE, 1999, pp. 379-389, vol. 3676.	
	A31	CHOU et al., "Lithographically-Induced Self Assembly of Periodic Polymer Micropillar Arrays," Journal of Vacuum Science and Technology, Nov/Dec 1999, pp. 3197-3202, vol. B 17(6).	
	A32	RUCHHOEFT et al., "Patterning Curved Surfaces: Template Generation by Ion Beam Proximity Lithography and Relief Transfer by Step and Flash Imprint Lithography," Journal of Vacuum Science and Technology, 1999, pp. 2965-2982, vol. 17.	

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Group Art Unit	Unassigned
Examiner Name	Unassigned
Attorney Docket Number	PA94-36-03

### OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS

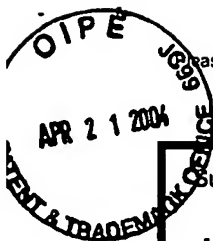
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<i>LA</i>	A33	CHOU, "Nanoimprint Lithography and Lithographically Induced Self-Assembly," MRS Bulletin, July 2001, pp. 512-517.	
	A34	MIRKIN et al., "Emerging Methods for Micro-and Nanofabrication," MRS Bulletin, July 2001, pp. 506-509	
	A35	CHOI et al., "High Precision Orientation Alignment and Gap Control Stages for Imprint Lithography Processes," U.S. Patent Application 09/698,317, Filed with USPTO on October 27, 2000.	
	A36	BENDER M. et al., "Fabrication of Nanostructures using a UV-based Imprint Technique," Microelectronic Engineering, pp 223-236; 2000.	
	A37	SREENIVASAN et al., "High-Resolution Overlay Alignment Methods and Systems for Imprint Lithography," U.S. Patent Application Publication 2002/0098426. Published on July 25, 2002.	
	A38	CHOI et al., "Method and System of Automatic Fluid Dispensing for Imprint Lithography Processes," U.S. Patent Application Publication 2002/0094496. Published on July 18, 2002.	
	A39	CHOI et al., "Methods for High-Precision Gap and Orientation Sensing Between a Transparent Template and Substrate for Imprint Lithography," U.S. Patent Application Publication 2003/0093122. Published on July 18, 2002.	
	A40	Nguyen, A. Q., "Asymmetric Fluid-Structure Dynamics in Nanoscale Imprint Lithography," University of Texas at Austin, August 2001.	
	A41	WATTS et al., "Low Viscosity High Resolution Patterning Material," U.S. Patent Application Publication 2003/0235787. Published on December 25, 2003.	
	A42	WATTS et al., "System and Method for Dispensing Liquids," U.S. Patent Application Publication 2004/0010341. Published on January 15, 2004.	
<i>LA</i>	A43	SREENIVASAN et al., "Step and Repeat Imprint Lithography Systems," U.S. Patent Application Publication 2004/0008334. Published on January 15, 2004.	

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		Examiner Name	Unassigned		
Sheet	5	of	5	Attorney Docket Number	PA94-36-03

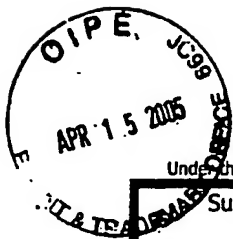
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	A44	WATTS et al., "Method For Fabricating Bulbous-Shaped Vias," U.S. Patent Application Publication 2004/0038552. Published on February 26, 2004.	
	A45	SREENIVASAN et al., "A Method Of Forming A Layer on A Substrate To Facilitate Fabrication Of Metrology Standards," U.S. Patent Application 10/264,926. Filed with USPTO on October 4, 2002.	
	A46	SREENIVASAN, "Postive Tone Bi-Layer Imprint Lithography Method," U.S. Patent Application 10/396,615. Filed with USPTO on March 25, 2003.	
	A47	SREENIVASAN, "A Method Of Forming Stepped Structures Employing Imprint Lithography," U.S. Patent Application 10/423,642. Filed with USPTO on April 25, 2003.	
	A48	CHOI et al., "Method To Reduce Adhesion Between A Conformable Region And A Pattern Of A Mold," U.S. Patent Application 10/463,396. Filed with USPTO on June 17, 2003.	

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				<b>APPLICATION NUMBER</b>	10/694,284
				<b>FILING DATE</b>	10/27/2003
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				<b>Group Art Unit</b>	2823
				<b>Examiner Name</b>	Toledo, Fernando
<b>Sheet</b>	1	of	8	<b>Attorney Docket Number</b>	PA94-36-03

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			

2/1	B1	6,391,217	B2	Schaffer et al.	5/21/2002	
	B2	6,696,220	B2	Bailey et al.	2/24/2004	
	B3	2004/0007799	A1	Choi et al.	1/15/2004	
	B4	2004/0021254	A1	Sreenivasan et al.	2/5/2004	
	B5	2004/0021866	A1	Watts et al.	2/5/2004	
	B6	2004/0022888	A1	Sreenivasan et al.	2/5/2004	
	B7	2004/0065252	A1	Sreenivasan et al.	4/8/2004	
	B8	10/687,519		Nguyen et al.	10/16/2003	
	B9	2002/0177319	A1	Chou	11/28/2002	
	B10	6,713,238	B1	Chou et al.	3/30/2004	
	B11	2004/0009673	A1	Sreenivasan et al.	1/15/2004	
	B12	2004/0124566	A1	Sreenivasan et al.	7/1/2004	
	B13	2004/0046271	A1	Watts	3/11/2004	
	B14	4,826,943		Ito et al.	5/2/1989	
	B15	4,931,351		McColgin et al.	6/5/1990	
	B16	5,169,494		Hashimoto et al.	12/8/1992	
	B17	6,646,662	B1	Nebashi et al.	11/11/2003	
2/1	B18	6,776,094	B1	Whitesides et al.	8/17/2004	

<b>Examiner Signature</b>		<b>Date Considered</b>	2/8/05
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				<b>FIRST NAMED INVENTOR</b>	Xu et al.
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241	B19	6,518,189	B1	Chou	2/11/2003	
	B20	2002/0132482	A1	Chou	9/19/2002	
	B21	2002/0167117	A1	Chou	11/14/2002	
	B22	6,482,742	B1	Chou	11/19/2002	
	B23	2003/0080471	A1	Chou	5/1/2003	
	B24	2004/0036201	A1	Chou et al.	2/26/2004	
	B25	2004/0192041	A1	Jeong et al.	9/30/2004	
	B26	6,828,244	B2	Chou	12/7/2004	
	B27	6,809,356	B2	Chou	10/26/2004	
	B28	2004/0197843	A1	Chou et al.	10/7/2004	
	B29	2004/0156108	A1	Chou et al.	8/12/2004	
	B30	2004/0137734	A1	Chou et al.	7/15/2004	
	B31	2004/0131718	A1	Chou et al.	7/8/2004	
	B32	2004/0118809	A1	Chou et al.	6/24/2004	
	B33	2004/0046288	A1	Chou	3/11/2004	
	B34	2003/0080472	A1	Chou	5/1/2003	
	B35	2003/0034329	A1	Chou	2/20/2003	
241	B36	2002/0042027	A1	Chou et al.	4/11/2002	

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<i>72-1</i>	B37	2004/0170770	A1	Nguyen et al.	9/2/2004	
	B38	5,594,042		Glover et al.	1/14/1997	
	B39	5,629,095		Bujanowski et al.	5/13/1997	
	B40	5,861,467		Bujanowski et al.	1/19/1999	
	B41	5,331,020		Brown et al.	7/19/1994	
	B42	4,617,238		Crivello et al.	10/14/1986	
	B43	6,132,632		Haney et al.	10/17/2000	
	B44	6,344,105	B1	Daugherty et al.	2/5/2002	
	B45	6,580,172	B2	Mancini et al.	6/17/2003	
	B46	11/027,473 ✓		Bailey et al.	12/30/2004	
	B47	10/948,511 ✓		Xu et al.	9/23/2004	
	B48	10/967,740 ✓		Xu et al.	10/18/2004	
	B49	10/919,224 ✓		Xu et al.	8/16/2004	
	B50	11/026,821		Willson et al.	12/30/2004	
	B51	4,512,848		Deckman et al.	4/23/1985	
	B52	2001/0044075	A1	Nishimura et al.	11/22/2001	
	B53	6,517,995	B1	Jacobson et al.	2/11/2003	
<i>72-1</i>	B54	5,369,722		Heming et al.	11/29/1994	

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Examiner Signature		Date Considered	6/5/02
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Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/694,284
				<b>FILING DATE</b>	10/27/2003
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				<b>Group Art Unit</b>	2823
				<b>Examiner Name</b>	Toledo, Fernando
<b>Sheet</b>	5	of	8	<b>Attorney Docket Number</b>	PA94-36-03

FOREIGN PATENT DOCUMENTS							
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>2</sup>
		Office	Number <sup>3</sup>				

<i>AM</i>	B64	WO	00/21689		Chou et al.	4/20/2000		
	B65	JP	02-92603		Kurikawa et al.	4/3/1990		
	B66	JP	02-24848		Kamio	1/26/1990		
	B67	WO	01/47003		Steiner et al.	6/28/2001		
	B68	WO	02/07199		Chou	1/24/2002		
	B69	WO	2004/114016		Chou et al.	12/29/2004		
	B70	WO	99/05724		Chou et al.	2/4/1999		
	B71	WO	03/010289		Chou et al.	2/6/2003		
	B72	WO	03/079416		Chou	9/25/2003		
<i>EW</i>	B73	WO	03/099536		Chou et al.	12/4/2003		

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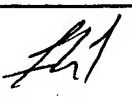
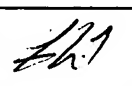
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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/694,284
				<b>FILING DATE</b>	10/27/2003
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				Group Art Unit	2823
				<b>Examiner Name</b>	Toledo, Fernando
Sheet <b>6</b> of <b>8</b>				<b>Attorney Docket Number</b>	PA94-36-03

**OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS**

Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>
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	B74	Choi et al., Design of Orientation Stages for Step and Flash Imprint Lithography, Precision Engineering, pp. 192 - 199, 1/1/2001	
	B75	Colburn et al., Step and Flash Imprint Lithography for sub-100 nm Patterning, Proceedings of SPIE Vol. 3997, pp. 453 - 457, 1/1/2000	
	B76	Johnson et al., Advances in Step and Flash Imprint Lithography, SPIE Microlithography Conference, 2/23/2003	
	B77	Heidari, Nanoimprint Lithography at the 6 in. Wafer Scale, J. Vac. Sci. Technol. B 18(6), pp. 3557 - 3560, 11/1/2000	
	B78	Translation of Japanese Patent 02-92603	
	B79	Translation of Japanese Patent 02-24848	
	B80	Hirai et al., Mold Surface Treatment for Imprint Lithography, Journal of Photopolymer Science and Technology, Vol. 14, No. 3, pp 457-462, 8/1/2001	
↓	B81	Roos et al., Nanoimprint Lithography with a Commercial 4 Inch Bond System for Hot embossing, Proceedings of SPIE Vol. 4343, pp. 427-435, 10/1/2001	
	B82	Chou et al., Ultrafast and Direct Imprint of Nanostructures in Silicon, Nature, Col. 417, (June 2002), pp. 835-837, 6/1/2002	

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				<b>APPLICATION NUMBER</b>	10/694,284
				<b>FILING DATE</b>	10/27/2003
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				Group Art Unit	2823
Sheet				7	of 8
				<b>Examiner Name</b>	Toledo, Fernando
				<b>Attorney Docket Number</b>	PA94-36-03

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>2</sup>

	B83	Chou et al., Nanoimprint Lithography, Journal of Vacuum Science Technolgy B 14(16), pp. 4129-4133, 11/1/1996	
	B84	Colburn et al., Development and Advantages of Step-and-Flash Lithography, Solid State Technology, 7/1/2001	
	B85	Colburn et al., Characterization and Modeling of Volumetric and Mechanical Properties for Step and Flash Imprint Lithography Photopolymers, Journal of Vacuum Science Technology. Vol b. 19(6), 11/1/2001	
	B86	Yu et al., Properties of Fluorinated Amorphous Diamond Like Carbon Films by PECVD, Applied Surface Science 219 (3-4); pp. 228-237, 12/1/2003	
	B87	Compon et al., Electroanalysis at Diamond-Like and Doped-Diamond Electrodes, Electroanalysis 15(17); pp. 1349-1363, 9/1/2003	
	B88	Mansano et al., Protective Carbon Layer for Chemical Corrosion of Stainless Steel, Diamond and Related Materials 12 (3-7); pp. 749-752, 3/1/2003	
	B89	Butter et al., Production and Wetting Properties of Fluorinated Diamond-Like Carbon Coatings, Thin Solid Films, 311(1-2); pp. 107-113, 12/31/1997	
	B90	Hakovirta et al., Heat Resistance of Fluorinated Diamond-Like Carbon Films, Diamond and Related Materials 10(8); pp. 1486-1490, 8/1/2001	
	B91	Zhu et al., The Improvement of the Oxidation Resistance of TiAl Alloys by Fluorine Plasma-Based Ion Implantation, Surface and Coatings Technology 158; pp. 502-507, 9/1/2002	

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<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  <i>(use as many sheets as necessary)</i>				<b>APPLICATION NUMBER</b>	10/694,284
				<b>FILING DATE</b>	10/27/2003
				<b>FIRST NAMED INVENTOR</b>	Xu et al.
				<b>Group Art Unit</b>	2823
				<b>Examiner Name</b>	Toledo, Fernando
Sheet <b>8</b> of <b>8</b>				<b>Attorney Docket Number</b>	PA94-36-03

OTHER PRIOR ART - NON PATENT LITERATURE DOCUMENTS			
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Art 1	B92	Yao et al., Structural, Mechanical and Hydrophobic Properties of Fluorine-Doped Diamond-Like Carbon Films Synthesized by Plasma Immersion Ion Implantation and Deposition (PIII-D), Applied Surface Science 230; pp. 172-178, 4/17/2004	
	B93	Bailey et al., Step and Flash Imprint Lithography: Defect Analysis, Journal of Vacuum Science, B 19(6), pp. 2806-2810, 11/1/2001	
	B94	Bailey et al., Step and Flash Imprint Lithography: Template Surface Treatment and Defect Analysis, Journal of Vacuum Science, B 18(6), pp. 3572-3577, 11/1/2000	
	B95	Schneider et al., Stripes of Partially Fluorinated Alkyl Chains: Dipolar Langmuir Monolayers	
	B96	Golden et al., Designing Porous Low-k Dielectrics, www.reed-electronics.com/semiconductor/index.asp?layout=articlePrint&articleID=CA82824, 4/6/2005	
	B97	Padovani et al., Chemically Bonded Porogens in Methylsilsesquioxane: I. Structure and Bonding, Journal of the Electrochemical Society, 149 (12) F161-F170, 10/16/2002	
Art 2	B98	Wolf et al., Silicon Processing for the VLSI Era, Volume 1--Process Technology, pp. 407-413, 1/1/1986	

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Substitute for form 1449A/PTO				<b>Complete if Known</b>	
<b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b>  (use as many sheets as necessary)				Application Number	10/894,284
				Filing Date	10/27/2003
				First Named Inventor	Xu et al.
				Group Art Unit	2823
				Examiner Name	Fernando Toledo
				Attorney Docket Number	PA84-38-03
Sheet	1	of	1		

U.S. PATENT DOCUMENTS						
Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			

AT	C1	6,488,642	B1	Bray et al.	10/22/2002	
	C2	5,542,978		Kindt-Larsen et al.	8/6/1996	
	C3	5,837,314		Beaton et al.	11/17/1998	
	C4	6,585,778	B1	Li et al.	5/20/2003	
	C5	6,503,814	B1	Benish et al.	1/7/2003	
	C6	6,849,272	B2	Moore et al.	11/18/2003	
	C7	6,204,343	B1	Barucha et al.	3/20/2001	
	C8	4,614,667		Larson et al.	8/30/1988	
	C9	3,810,874		Mitsch et al.	5/14/1974	
	C10	6,737,489	B2	Linert et al.	5/18/2004	
	C11	6,721,529	B2	Chen et al.	4/13/2004	
	C12	6,664,308	B2	Gaddam et al.	12/16/2003	
	C13	6,790,905	B2	Fitzgerald et al.	8/14/2004	
	C14	6,544,594	B2	Linford et al.	4/8/2003	
	C15	6,774,183	B1	Palumbo et al.	8/10/2004	
	C16	6,830,819	B2	Kaplan et al.	12/14/2004	
	C17	6,802,870	B2	Chang et al.	10/12/2004	
AT	C18	6,389,696		Dempsey et al.	2/14/1995	

Examiner Signature		Date Considered	6/8/05
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